

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,060,281 B1  
APPLICATION NO. : 09/596746  
DATED : June 13, 2006  
INVENTOR(S) : Raymond J. Dattwyler et al.

Page 1 of 63

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 45, Insert SEQ ID NOS. 53-86 after SEQ ID NO: 52 as attached.

Signed and Sealed this

Sixteenth Day of October, 2007

A handwritten signature in black ink, appearing to read "Jon W. Dudas". The signature is stylized with a large, looped initial "J" and a distinct "D".

JON W. DUDAS  
*Director of the United States Patent and Trademark Office*

&lt;210&gt; 53

&lt;211&gt; 1137

&lt;212&gt; DNA

&lt;213&gt; ospC Chimera

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)...(1137)

&lt;400&gt; 53

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130 135 140	
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Asn Ser Val Lys Glu Leu Thr Ser Pro Val Val Ala Glu Ser Pro Lys	
180 185 190	
aaa cct ttc cat ggt aat aat tca ggt ggg gat tct gca tct act aat	624
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260 265 270	
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325 330 335

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 Leu Val Leu Ser Ile Asp Glu Leu Ala Lys Lys Ala Ile Gly Gln Lys  
                   50                                  55                                  60  
 Ile Asp Asn Asn Asn Gly Leu Ala Ala Leu Asn Asn Gln Asn Gly Ser  
   65                                  70                                  75                                  80  
 Leu Leu Ala Gly Ala Tyr Ala Ile Ser Thr Leu Ile Thr Glu Lys Leu  
                   85                                  90                                  95  
 Ser Lys Leu Lys Asn Leu Glu Glu Leu Lys Thr Glu Ile Ala Lys Ala  
                   100                                  105                                  110  
 Lys Lys Cys Ser Glu Glu Phe Thr Asn Lys Leu Lys Ser Gly His Ala  
                   115                                  120                                  125  
 Asp Leu Gly Lys Gln Asp Ala Thr Asp Asp His Ala Lys Ala Ala Ile  
                   130                                  135                                  140

Leu Lys Thr His Ala Thr Thr Asp Lys Gly Ala Lys Glu Phe Lys Asp  
 145 150 155 160  
 Leu Phe Glu Ser Val Glu Gly Leu Leu Lys Ala Ala Gln Val Ala Leu  
 165 170 175  
 Thr Asn Ser Val Lys Glu Leu Thr Ser Pro Val Val Ala Glu Ser Pro  
 180 185 190  
 Lys Lys Pro His Met Ala Asn Asn Ser Gly Gly Asp Ser Ala Ser Thr  
 195 200 205  
 Asn Pro Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Val Ile Ser Lys  
 210 215 220  
 Lys Ile Thr Asp Ser Asn Ala Phe Leu Leu Ala Val Lys Glu Val Glu  
 225 230 235 240  
 Ala Leu Leu Ser Ser Ile Asp Glu Leu Ser Lys Ala Ile Gly Lys Lys  
 245 250 255  
 Ile Lys Asn Asp Gly Thr Leu Asp Asn Glu Ala Asn Arg Asn Glu Ser  
 260 265 270  
 Leu Ile Ala Gly Ala Tyr Glu Ile Ser Lys Leu Ile Thr Gln Lys Leu  
 275 280 285  
 Ser Val Leu Asn Ser Glu Glu Leu Lys Lys Lys Ile Lys Glu Ala Lys  
 290 295 300  
 Asp Cys Ser Gln Lys Phe Thr Thr Lys Leu Lys Asp Ser His Ala Glu  
 305 310 315 320  
 Leu Gly Ile Gln Ser Val Gln Asp Asp Asn Ala Lys Lys Ala Ile Leu  
 325 330 335  
 Lys Thr His Gly Thr Lys Asp Lys Gly Ala Lys Glu Leu Glu Glu Leu  
 340 345 350  
 Phe Lys Ser Leu Glu Ser Leu Ser Lys Ala Ala Gln Ala Ala Leu Thr  
 355 360 365  
 Asn Ser Val Lys Glu Leu Thr Asn Pro Val Val Ala Glu Ser Pro Lys  
 370 375 380  
 Lys Pro  
 385

<210> 59  
 <211> 1197  
 <212> DNA  
 <213> ospC Chimera

<220>  
 <221> CDS  
 <222> (1)...(1197)

<400> 59  
 atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt 48  
 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
 1 5 10 15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa 96  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
 20 25 30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct 144  
 Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
 35 40 45

aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta 192  
 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu  
 50 55 60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gaa att 240  
 Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile  
 65 70 75 80

gct gct aaa gct att ggt aaa aaa ata cac caa aat aat ggt ttg gat 288  
 Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp  
 85 90 95

acc gaa tat aat cac aat gga tca ttg tta gcg gga gct tat gca ata 336  
 Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile  
 100 105 110

tca acc cta ata aaa caa aaa tta gat gga ttg aaa aat gaa gga tta 384  
 Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu  
 115 120 125

aag gaa aaa att gat gcg gct aag aaa tgt tct gaa aca ttt act aat 432  
 Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn  
 130 135 140

aaa tta aaa gaa aaa cac aca gat ctt ggt aaa gaa ggt gtt act gat 480

Lys 145	Leu	Lys	Glu	Lys	His	Thr	Asp	Leu	Gly	Lys	Glu	Gly	Val	Thr	Asp	160
gct Ala	gat Asp	gca Ala	aaa Lys	gaa Glu	gcc Ala	att Ile	tta Leu	aaa Lys	aca Thr	aat Asn	ggg Gly	act Thr	aaa Lys	act Thr	aaa Lys	528
ggg Gly	gct Ala	gaa Glu	gaa Glu	ctt Leu	gga Gly	aaa Lys	tta Leu	ttt Phe	gaa Glu	tca Ser	gta Val	gag Glu	gtc Val	ttg Leu	tca Ser	576
aaa Lys	gca Ala	gct Ala	aaa Lys	gag Glu	atg Met	ctt Leu	gct Ala	aat Asn	tca Ser	ggt Val	aaa Lys	gag Glu	ctt Leu	aca Thr	agc Ser	624
cct Pro	gtt Val	gtg Val	gca Ala	gaa Glu	agt Ser	cca Pro	gcc Ala	atg Met	gta Val	aat Asn	aat Asn	tca Ser	ggg Gly	aaa Lys	gat Asp	672
ggg Gly	aat Asn	aca Thr	tct Ser	gca Ala	aat Asn	tct Ser	gct Ala	gat Asp	gag Glu	tct Ser	gtt Val	aaa Lys	ggg Gly	cct Pro	aat Asn	720
ctt Leu	aca Thr	gaa Glu	ata Ile	agt Ser	aaa Lys	aaa Lys	att Ile	aca Thr	gaa Glu	tct Ser	aac Asn	gca Ala	gtt Val	gtt Val	ctc Leu	768
gcc Ala	gtg Val	aaa Lys	gaa Glu	gtt Val	gaa Glu	act Thr	ttg Leu	ctt Leu	aca Thr	tct Ser	ata Ile	gat Asp	gag Glu	ctt Leu	gct Ala	816
aaa Lys	gct Ala	att Ile	ggg Gly	aaa Lys	aaa Lys	ata Ile	aaa Lys	aac Asn	gat Asp	gtt Val	agt Ser	tta Leu	gat Asp	aat Asn	gag Glu	864
gca Ala	gat Asp	cac His	aac Asn	gga Gly	tca Ser	tta Leu	ata Ile	tca Ser	gga Gly	gca Ala	tat Tyr	tta Leu	att Ile	tca Ser	aac Asn	912
tta Leu	ata Ile	aca Thr	aaa Lys	aaa Lys	ata Ile	agt Ser	gca Ala	ata Ile	aaa Lys	gat Asp	tca Ser	gga Gly	gaa Glu	ttg Leu	aag Lys	960
gca Ala	gaa Glu	att Ile	gaa Glu	aag Lys	gct Ala	aag Lys	aaa Lys	tgt Cys	tct Ser	gaa Glu	gaa Glu	ttt Phe	act Thr	gct Ala	aaa Lys	1008

tta aaa ggt gaa cac aca gat ctt ggt aaa gaa ggc gtt act gat gat 1056  
 Leu Lys Gly Glu His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp Asp  
                   340                                  345                                  350

aat gca aaa aaa gcc att tta aaa aca aat aat gat aaa act aag ggc 1104  
 Asn Ala Lys Lys Ala Ile Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly  
                   355                                  360                                  365

gct gat gaa ctt gaa aag tta ttt gaa tca gta aaa aac ttg tca aaa 1152  
 Ala Asp Glu Leu Glu Lys Leu Phe Glu Ser Val Lys Asn Leu Ser Lys  
                   370                                  375                                  380

gca gct aaa gag atg ctt act aat tca gtt aaa gag ctt aca agc 1197  
 Ala Ala Lys Glu Met Leu Thr Asn Ser Val Lys Glu Leu Thr Ser  
                   385                                  390                                  395

<210> 60  
 <211> 399  
 <212> PRT  
 <213> ospC Chimera

<400> 60  
 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
   1                                  5                                  10                                  15  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
                   20                                  25                                  30  
 Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
                   35                                  40                                  45  
 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu  
   50                                  55                                  60  
 Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile  
   65                                  70                                  75                                  80  
 Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp  
                   85                                  90                                  95  
 Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile  
                   100                                  105                                  110  
 Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu  
                   115                                  120                                  125  
 Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn  
                   130                                  135                                  140  
 Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp  
   145                                  150                                  155                                  160  
 Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys  
                   165                                  170                                  175  
 Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser  
                   180                                  185                                  190



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Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
    195                200                205
Pro Val Val Ala Glu Ser Pro Ala Met Val Asn Asn Ser Gly Lys Asp
    210                215                220
Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn
    225                230                235                240

Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu
    245                250                255
Ala Val Lys Glu Val Glu Thr Leu Leu Thr Ser Ile Asp Glu Leu Ala
    260                265                270
Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Val Ser Leu Asp Asn Glu
    275                280                285
Ala Asp His Asn Gly Ser Leu Ile Ser Gly Ala Tyr Leu Ile Ser Asn
    290                295                300
Leu Ile Thr Lys Lys Ile Ser Ala Ile Lys Asp Ser Gly Glu Leu Lys
    305                310                315                320
Ala Glu Ile Glu Lys Ala Lys Lys Cys Ser Glu Glu Phe Thr Ala Lys
    325                330                335
Leu Lys Gly Glu His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp Asp
    340                345                350
Asn Ala Lys Lys Ala Ile Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly
    355                360                365
Ala Asp Glu Leu Glu Lys Leu Phe Glu Ser Val Lys Asn Leu Ser Lys
    370                375                380
Ala Ala Lys Glu Met Leu Thr Asn Ser Val Lys Glu Leu Thr Ser
    385                390                395

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<210> 61
<211> 1196
<212> DNA
<213> ospC Chimera

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<220>
<221> CDS
<222> (1)...(1196)

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<400> 61
atg aga tta tta ata gga ttt gct tta gcg tta got tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
  1                5                10                15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa   96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
    20                25                30

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gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct	144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro	
35 40 45	
aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta	192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu	
50 55 60	
ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gaa att	240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile	
65 70 75 80	
gct gct aaa gct att ggt aaa aaa ata cac caa aat aat ggt ttg gat	288
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp	
85 90 95	
acc gaa tat aat cac aat gga tca ttg tta gcg gga gct tat gca ata	336
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile	
100 105 110	
tca acc cta ata aaa caa aaa tta gat gga ttg aaa aat gaa gga tta	384
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu	
115 120 125	
aag gaa aaa att gat gcg gct aag aaa tgt tct gaa aca ttt act aat	432
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn	
130 135 140	
aaa tta aaa gaa aaa cac aca gat ctt ggt aaa gaa ggt gtt act gat	480
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp	
145 150 155 160	
gct gat gca aaa gaa gcc att tta aaa aca aat ggt act aaa act aaa	528
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys	
165 170 175	
ggt gct gaa gaa ctt gga aaa tta ttt gaa tca gta gag gtc ttg tca	576
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser	
180 185 190	
aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca agc	624
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser	
195 200 205	
cct gtt gtg gca gaa agt cca gcc atg gta aat aat tca gga aaa gat	672
Pro Val Val Ala Glu Ser Pro Ala Met Val Asn Asn Ser Gly Lys Asp	
210 215 220	

ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct aat	720
Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn	
225 230 235 240	
ctt aca gaa ata agt aaa aaa att aca gaa tct aac gca gtt gtt ctg	768
Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu	
245 250 255	
gct gtg aaa gaa att gaa act ttg ctt gca tct ata gat gaa ctt got	816
Ala Val Lys Glu Ile Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala	
260 265 270	
act aaa gct att ggt aaa aaa ata caa caa aat ggt ggt tta gct gtc	864
Thr Lys Ala Ile Gly Lys Lys Ile Gln Gln Asn Gly Gly Leu Ala Val	
275 280 285	
gaa gcg ggg cat aat gga aca ttg tta gca ggt gct tat aca ata tca	912
Glu Ala Gly His Asn Gly Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser	
290 295 300	
aaa cta ata aca caa aaa tta gat gga ttg aaa aat tca gaa aaa tta	960
Lys Leu Ile Thr Gln Lys Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu	
305 310 315 320	
aag gaa aaa att gaa aat gct aag aaa tgt tot gaa gat ttt act aaa	1008
Lys Glu Lys Ile Glu Asn Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys	
325 330 335	
aaa cta gaa gga gaa cat gcg oaa ctt gga att gaa aat gtt act gat	1056
Lys Leu Glu Gly Glu His Ala Gln Leu Gly Ile Glu Asn Val Thr Asp	
340 345 350	
gag aat gca aaa aaa gct att tta ata aca gat gca gct aaa gat aag	1104
Glu Asn Ala Lys Lys Ala Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys	
355 360 365	
ggc gct gca gag ctt gaa aag cta ttt aaa gca gta gaa aac ttg gca	1152
Gly Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ala	
370 375 380	
aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt ac	1196
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu	
385 390 395	

<210> 62  
 <211> 398  
 <212> PRT  
 <213> ospC Chimera

<400> 62

Met	Arg	Leu	Leu	Ile	Gly	Phe	Ala	Leu	Ala	Leu	Ala	Leu	Ile	Gly	Cys	
1				5					10					15		
Ala	Gln	Lys	Gly	Ala	Glu	Ser	Ile	Gly	Ser	Cys	Asn	Asn	Ser	Gly	Lys	
			20					25					30			
Asp	Gly	Asn	Thr	Ser	Ala	Asn	Ser	Ala	Asp	Glu	Ser	Val	Lys	Gly	Pro	
		35					40					45				
Asn	Leu	Thr	Glu	Ile	Ser	Lys	Lys	Ile	Thr	Asp	Ser	Asn	Ala	Val	Leu	
		50				55					60					
Leu	Ala	Val	Lys	Glu	Val	Glu	Ala	Leu	Leu	Ser	Ser	Ile	Asp	Glu	Ile	
65					70					75				80		
Ala	Ala	Lys	Ala	Ile	Gly	Lys	Lys	Ile	His	Gln	Asn	Asn	Gly	Leu	Asp	
			85					90					95			
Thr	Glu	Tyr	Asn	His	Asn	Gly	Ser	Leu	Leu	Ala	Gly	Ala	Tyr	Ala	Ile	
			100					105					110			
Ser	Thr	Leu	Ile	Lys	Gln	Lys	Leu	Asp	Gly	Leu	Lys	Asn	Glu	Gly	Leu	
		115				120						125				
Lys	Glu	Lys	Ile	Asp	Ala	Ala	Lys	Lys	Cys	Ser	Glu	Thr	Phe	Thr	Asn	
		130				135					140					
Lys	Leu	Lys	Glu	Lys	His	Thr	Asp	Leu	Gly	Lys	Glu	Gly	Val	Thr	Asp	
145					150					155					160	
Ala	Asp	Ala	Lys	Glu	Ala	Ile	Leu	Lys	Thr	Asn	Gly	Thr	Lys	Thr	Lys	
			165						170					175		
Gly	Ala	Glu	Glu	Leu	Gly	Lys	Leu	Phe	Glu	Ser	Val	Glu	Val	Leu	Ser	
		180						185					190			
Lys	Ala	Ala	Lys	Glu	Met	Leu	Ala	Asn	Ser	Val	Lys	Glu	Leu	Thr	Ser	
		195					200					205				
Pro	Val	Val	Ala	Glu	Ser	Pro	Ala	Met	Val	Asn	Asn	Ser	Gly	Lys	Asp	
		210					215					220				
Gly	Asn	Thr	Ser	Ala	Asn	Ser	Ala	Asp	Glu	Ser	Val	Lys	Gly	Pro	Asn	
225					230					235				240		
Leu	Thr	Glu	Ile	Ser	Lys	Lys	Ile	Thr	Glu	Ser	Asn	Ala	Val	Val	Leu	
			245						250					255		
Ala	Val	Lys	Glu	Ile	Glu	Thr	Leu	Leu	Ala	Ser	Ile	Asp	Glu	Leu	Ala	
			260					265					270			
Thr	Lys	Ala	Ile	Gly	Lys	Lys	Ile	Gln	Gln	Asn	Gly	Gly	Leu	Ala	Val	
		275					280					285				
Glu	Ala	Gly	His	Asn	Gly	Thr	Leu	Leu	Ala	Gly	Ala	Tyr	Thr	Ile	Ser	
		290				295					300					
Lys	Leu	Ile	Thr	Gln	Lys	Leu	Asp	Gly	Leu	Lys	Asn	Ser	Glu	Lys	Leu	
305					310					315					320	

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Lys Glu Lys Ile Glu Asn Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys
      325                      330                      335

Lys Leu Glu Gly Glu His Ala Gln Leu Gly Ile Glu Asn Val Thr Asp
      340                      345                      350
Glu Asn Ala Lys Lys Ala Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys
      355                      360                      365
Gly Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ala
      370                      375                      380
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu
      385                      390                      395

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<210> 63
<211> 1185
<212> DNA
<213> ospC Chimera

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<220>
<221> CDS
<222> (1)...(1185)

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<400> 63
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt 48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1              5              10              15

gca caa aaa ggt got gag tca att gga tcc tgt aat aat tca ggg aaa 96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
      20              25              30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct 144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
      35              40              45

aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta 192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
      50              55              60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gag ctt 240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
      65              70              75              80

gct aaa gct att ggt aaa aaa ata aaa aac gat ggt agt tta gat aat 288
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn
      85              90              95

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gaa gca aat cgc aac gag tca ttg tta gca gga gct tat aca ata tca	336
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser	
100 105 110	
acc tta ata aca caa aaa tta agt aaa tta aac gga tca gaa ggt tta	384
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu	
115 120 125	
aag gaa aag att gcc gca gct aag aaa tgc tct gaa gag ttt agt act	432
Lys Glu Lys Lys Ile Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr	
130 135 140	
aaa cta aaa gat aat cat gca cag ctt ggt ata cag ggc gtt act gat	480
Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp	
145 150 155 160	
gaa aat gca aaa aaa gct att tta aaa gca aat gca gcg ggt aaa gat	528
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp	
165 170 175	
aag ggc gtt gaa gaa ctt gaa aag ttg tcc gga tca tta gaa agc tta	576
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu	
180 185 190	
tca aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca	624
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr	
195 200 205	
agc cct gtt gtc cat ggt aat aat tca ggg aaa gat ggg aat aca tot	672
Ser Pro Val Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser	
210 215 220	
gca aat tct gct gat gag tct gtt aaa ggg cct aat ctt aca gaa ata	720
Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile	
225 230 235 240	
agt aaa aaa att aca gaa tct aac gca gtt gtt ctc gcc gtg aaa gaa	768
Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu	
245 250 255	
gtt gaa act ttg ctt aca tct ata gat gag ctt gct aaa gct att ggt	816
Val Glu Thr Leu Leu Thr Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly	
260 265 270	
aaa aaa ata aaa aac gat gtt agt tta gat aat gag gca gat cac aac	864

Lys Lys Ile Lys Asn Asp Val Ser Leu Asp Asn Glu Ala Asp His Asn  
 275 280 285  
 gga tca tta ata tca gga gca tat tta att tca aac tta ata aca aaa 912  
 Gly Ser Leu Ile Ser Gly Ala Tyr Leu Ile Ser Asn Leu Ile Thr Lys  
 290 295 300  
 aaa ata agt gca ata aaa gat tca gga gaa ttg aag gca gaa att gaa 960  
 Lys Ile Ser Ala Ile Lys Asp Ser Gly Glu Leu Lys Ala Glu Ile Glu  
 305 310 315 320  
 aag gct aag aaa tgt tct gaa gaa ttt act gct aaa tta aaa ggt gaa 1008  
 Lys Ala Lys Lys Cys Ser Glu Glu Phe Thr Ala Lys Leu Lys Gly Glu  
 325 330 335  
 cac aca gat ctt ggt aaa gaa ggc gtt act gat gat aat gca aaa aaa 1056  
 His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp Asp Asn Ala Lys Lys  
 340 345 350  
 gcc att tta aaa aca aat aat gat aaa act aag ggc gct gat gaa ctt 1104  
 Ala Ile Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly Ala Asp Glu Leu  
 355 360 365  
 gaa aag tta ttt gaa tca gta aaa aac ttg tca aaa gca gct aaa gag 1152  
 Glu Lys Leu Phe Glu Ser Val Lys Asn Leu Ser Lys Ala Ala Lys Glu  
 370 375 380  
 atg ctt act aat tca gtt aaa gag ctt aca agc 1185  
 Met Leu Thr Asn Ser Val Lys Glu Leu Thr Ser  
 385 390 395

&lt;210&gt; 64

&lt;211&gt; 395

&lt;212&gt; PRT

&lt;213&gt; ospC Chimera

&lt;400&gt; 64

Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
 1 5 10 15  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
 20 25 30  
 Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
 35 40 45  
 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu  
 50 55 60

Leu	Ala	Val	Lys	Glu	Val	Glu	Ala	Leu	Leu	Ser	Ser	Ile	Asp	Glu	Leu
65					70					75				80	
Ala	Lys	Ala	Ile	Gly	Lys	Lys	Ile	Lys	Asn	Asp	Gly	Ser	Leu	Asp	Asn
			85						90					95	
Glu	Ala	Asn	Arg	Asn	Glu	Ser	Leu	Leu	Ala	Gly	Ala	Tyr	Thr	Ile	Ser
			100						105					110	
Thr	Leu	Ile	Thr	Gln	Lys	Leu	Ser	Lys	Leu	Asn	Gly	Ser	Glu	Gly	Leu
			115						120					125	
Lys	Glu	Lys	Ile	Ala	Ala	Ala	Lys	Lys	Cys	Ser	Glu	Glu	Phe	Ser	Thr
			130						135					140	
Lys	Leu	Lys	Asp	Asn	His	Ala	Gln	Leu	Gly	Ile	Gln	Gly	Val	Thr	Asp
145					150					155					160
Glu	Asn	Ala	Lys	Lys	Ala	Ile	Leu	Lys	Ala	Asn	Ala	Ala	Gly	Lys	Asp
					165					170					175
Lys	Gly	Val	Glu	Glu	Leu	Glu	Lys	Leu	Ser	Gly	Ser	Leu	Glu	Ser	Leu
			180							185					190
Ser	Lys	Ala	Lys	Glu	Met	Leu	Ala	Asn	Ser	Val	Lys	Glu	Leu	Thr	
			195							200					205
Ser	Pro	Val	Val	His	Gly	Asn	Asn	Ser	Gly	Lys	Asp	Gly	Asn	Thr	Ser
			210							215					220
Ala	Asn	Ser	Ala	Asp	Glu	Ser	Val	Lys	Gly	Pro	Asn	Leu	Thr	Glu	Ile
225										230					235
Ser	Lys	Lys	Ile	Thr	Glu	Ser	Asn	Ala	Val	Val	Leu	Ala	Val	Lys	Glu
					245					250					255
Val	Glu	Thr	Leu	Leu	Thr	Ser	Ile	Asp	Glu	Leu	Ala	Lys	Ala	Ile	Gly
			260							265					270
Lys	Lys	Ile	Lys	Asn	Asp	Val	Ser	Leu	Asp	Asn	Glu	Ala	Asp	His	Asn
			275							280					285
Gly	Ser	Leu	Ile	Ser	Gly	Ala	Tyr	Leu	Ile	Ser	Asn	Leu	Ile	Thr	Lys
			290							295					300
Lys	Ile	Ser	Ala	Ile	Lys	Asp	Ser	Gly	Glu	Leu	Lys	Ala	Glu	Ile	Glu
305										310					315
Lys	Ala	Lys	Lys	Cys	Ser	Glu	Glu	Phe	Thr	Ala	Lys	Leu	Lys	Gly	Glu
										325					330
His	Thr	Asp	Leu	Gly	Lys	Glu	Gly	Val	Thr	Asp	Asp	Asn	Ala	Lys	Lys
			340							345					350
Ala	Ile	Leu	Lys	Thr	Asn	Asn	Asp	Lys	Thr	Lys	Gly	Ala	Asp	Glu	Leu
			355							360					365
Glu	Lys	Leu	Phe	Glu	Ser	Val	Lys	Asn	Leu	Ser	Lys	Ala	Ala	Lys	Glu
			370							375					380
Met	Leu	Thr	Asn	Ser	Val	Lys	Glu	Leu	Thr	Ser					
385										390					395



<210> 65  
 <211> 1184  
 <212> DNA  
 <213> ospC Chimera

<220>  
 <221> CDS  
 <222> (1)...(1184)

<400> 65  
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 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
 1 5 10 15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa 96  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
 20 25 30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct 144  
 Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
 35 40 45

aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta 192  
 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu  
 50 55 60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gag ctt 240  
 Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu  
 65 70 75 80

gct aaa gct att ggt aaa aaa ata aaa aac gat ggt agt tta gat aat 288  
 Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn  
 85 90 95

gaa gca aat cgc aac gag tca ttg tta gca gga gct tat aca ata tca 336  
 Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser  
 100 105 110

acc tta ata aca caa aaa tta agt aaa tta aac gga tca gaa ggt tta 384  
 Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu  
 115 120 125

aag gaa aag att gcc gca gct aag aaa tgc tct gaa gag ttt agt act 432  
 Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr  
 130 135 140

aaa cta aaa gat aat cat gca cag ctt ggt ata cag ggc gtt act gat 480

Lys	Leu	Lys	Asp	Asn	His	Ala	Gln	Leu	Gly	Ile	Gln	Gly	Val	Thr	Asp	
145					150					155					160	
gaa	aat	gca	aaa	aaa	gct	att	tta	aaa	gca	aat	gca	gcg	ggt	aaa	gat	528
Glu	Asn	Ala	Lys	Lys	Ala	Ile	Leu	Lys	Ala	Asr	Ala	Ala	Gly	Lys	Asp	
				165				170						175		
aag	ggc	gtt	gaa	gaa	ctt	gaa	aag	ttg	tcc	gga	tca	tta	gaa	agc	tta	576
Lys	Gly	Val	Glu	Glu	Leu	Glu	Lys	Leu	Ser	Gly	Ser	Leu	Glu	Ser	Leu	
			180					185					190			
tca	aaa	gca	gct	aaa	gag	atg	ctt	gct	aat	tca	gtt	aaa	gag	ctt	aca	624
Ser	Lys	Ala	Ala	Lys	Glu	Met	Leu	Ala	Asn	Ser	Val	Lys	Glu	Leu	Thr	
		195					200					205				
agc	cct	gtt	gtc	cat	ggg	aat	aat	tca	gga	aaa	gat	ggg	aat	aca	tct	672
Ser	Pro	Val	Val	His	Gly	Asn	Asn	Ser	Gly	Lys	Asp	Gly	Asn	Thr	Ser	
	210					215					220					
gca	aat	tct	gct	gat	gag	tct	gtt	aaa	ggg	cct	aat	ctt	aca	gaa	ata	720
Ala	Asn	Ser	Ala	Asp	Glu	Ser	Val	Lys	Gly	Pro	Asn	Leu	Thr	Glu	Ile	
225					230				235					240		
agt	aaa	aaa	att	aca	gaa	tct	aac	gca	gtt	gtt	ctg	gct	gtg	aaa	gaa	768
Ser	Lys	Lys	Ile	Thr	Glu	Ser	Asn	Ala	Val	Val	Leu	Ala	Val	Lys	Glu	
				245				250						255		
att	gaa	act	ttg	ctt	gca	tct	ata	gat	gaa	ctt	gct	act	aaa	gct	att	816
Ile	Glu	Thr	Leu	Leu	Ala	Ser	Ile	Asp	Glu	Leu	Ala	Thr	Lys	Ala	Ile	
			260					265					270			
ggg	aaa	aaa	ata	caa	caa	aat	ggg	ggg	tta	gct	gtc	gaa	gcg	ggg	cat	864
Gly	Lys	Lys	Ile	Gln	Gln	Asn	Gly	Gly	Leu	Ala	Val	Glu	Ala	Gly	His	
		275					280					285				
aat	gga	aca	ttg	tta	gca	ggg	gct	tat	aca	ata	tca	aaa	cta	ata	aca	912
Asn	Gly	Thr	Leu	Leu	Ala	Gly	Ala	Tyr	Thr	Ile	Ser	Lys	Leu	Ile	Thr	
	290					295					300					
caa	aaa	tta	gat	gga	ttg	aaa	aat	tca	gaa	aaa	tta	aag	gaa	aaa	att	960
Gln	Lys	Leu	Asp	Gly	Leu	Lys	Asn	Ser	Glu	Lys	Leu	Lys	Glu	Lys	Ile	
305					310					315					320	
gaa	aat	gct	aag	aaa	tgt	tct	gaa	gat	ttt	act	aaa	aaa	cta	gaa	gga	1008
Glu	Asn	Ala	Lys	Lys	Cys	Ser	Glu	Asp	Phe	Thr	Lys	Lys	Leu	Glu	Gly	
				325					330					335		

gaa cat gcg caa ctt gga att gaa aat gtt act gat gag aat gca aaa 1056  
 Glu His Ala Gln Leu Gly Ile Glu Asn Val Thr Asp Glu Asn Ala Lys  
                   340                                  345                                  350

aaa gct att tta ata aca gat gca gct aaa gat aag ggc gct gca gag 1104  
 Lys Ala Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys Gly Ala Ala Glu  
                   355                                  360                                  365

ctt gaa aag cta ttt aaa gca gta gaa aac ttg gca aaa gca gct aaa 1152  
 Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ala Lys Ala Ala Lys  
                   370                                  375                                  380

gag atg ctt gct aat tca gtt aaa gag ctt ac 1184  
 Glu Met Leu Ala Asn Ser Val Lys Glu Leu  
                   385                                  390

<210> 66

<211> 394

<212> PRT

<213> ospC Chimera

<400> 66

Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
   1                                  5                                  10                                  15  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
                   20                                  25                                  30  
 Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
                   35                                  40                                  45

Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu  
   50                                  55                                  60  
 Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu  
   65                                  70                                  75                                  80  
 Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn  
                   85                                  90                                  95  
 Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser  
                   100                                  105                                  110  
 Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu  
                   115                                  120                                  125  
 Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr  
                   130                                  135                                  140  
 Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp  
   145                                  150                                  155                                  160  
 Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp  
                   165                                  170                                  175

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Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu
      180              185              190
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr
      195              200              205
Ser Pro Val Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser
      210              215              220
Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile
      225              230              235              240
Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu
      245              250              255
Ile Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile
      260              265              270
Gly Lys Lys Ile Gln Gln Asn Gly Gly Leu Ala Val Glu Ala Gly His
      275              280              285
Asn Gly Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser Lys Leu Ile Thr
      290              295              300
Gln Lys Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu Lys Glu Lys Ile
      305              310              315              320
Glu Asn Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys Lys Leu Glu Gly
      325              330              335
Glu His Ala Gln Leu Gly Ile Glu Asn Val Thr Asp Glu Asn Ala Lys
      340              345              350
Lys Ala Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys Gly Ala Ala Glu
      355              360              365
Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ala Lys Ala Ala Lys
      370              375              380
Glu Met Leu Ala Asn Ser Val Lys Glu Leu
      385              390

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&lt;210&gt; 67

&lt;211&gt; 1184

&lt;212&gt; DNA

&lt;213&gt; ospC Chimera

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)...(1184)

&lt;400&gt; 67

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atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt      48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
      1              5              10              15

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gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa      96
Ala Gln Lys Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
      20              25              30

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gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct	144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro	
35 40 45	
aat ott aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta	192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu	
50 55 60	
ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gag ctt	240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu	
65 70 75 80	
gct aaa gct att ggt aaa aaa ata aaa aac gat ggt agt tta gat aat	288
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn	
85 90 95	
gaa gca aat cgc aac gag tca ttg tta gca gga gct tat aca ata tca	336
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser	
100 105 110	
acc tta ata aca caa aaa tta agt aaa tta aac gga tca gaa ggt tta	384
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu	
115 120 125	
aag gaa aag att gcc gca gct aag aaa tgc tct gaa gag ttt agt act	432
Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr	
130 135 140	
aaa cta aaa gat aat cat gca cag ctt ggt ata cag ggc gtt act gat	480
Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp	
145 150 155 160	
gaa aat gca aaa aaa gct att tta aaa gca aat gca gcg ggt aaa gat	528
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp	
165 170 175	
aag ggc gtt gaa gaa ctt gaa aag ttg tcc gga tca tta gaa agc tta	576
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu	
180 185 190	
tca aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca	624
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr	
195 200 205	

agc oct gtt gtc cat ggt aat aat tca aga aaa gat ggg aat gca tct Ser Pro Val Val His Gly Asn Asn Ser Arg Lys Asp Gly Asn Ala Ser 210 215 220	672
aca aat tct gcc gat gag tct gtt aaa ggg cct aat ctt aca gaa ata Thr Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile 225 230 235 240	720
agt aaa aaa att aca gaa tct aac gca gtt gtt ctg gcc gtg aaa gaa Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu 245 250 255	768
gtt gag acc tta ctt gca tct ata gat gaa ctt gct acc aaa gct att Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile 260 265 270	816
ggc aag aaa ata ggc aat aat ggt tta gag gcc aat cag agt aaa aac Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala Asn Gln Ser Lys Asn 275 280 285	864
aca tca ttg tta tca gga gct tat gca ata tct gac cta ata gca gaa Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser Asp Leu Ile Ala Glu 290 295 300	912
aaa tta aat gta ttg aaa aat gaa gaa tta aag gaa aag att gat aca Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys Glu Lys Ile Asp Thr 305 310 315 320	960
gct aag caa tgt tct aca gaa ttt act aat aaa cta aaa agt gaa cat Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys Leu Lys Ser Glu His 325 330 335	1008
gca gtg ctt ggt ctg gac aat ctt act gat gat aat gca caa aga gct Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp Asn Ala Gln Arg Ala 340 345 350	1056
att tta aaa aaa cat gca aat aaa gat aag ggt gct gca gaa ctt gaa Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly Ala Ala Glu Leu Glu 355 360 365	1104
aag tta ttt aaa gcg gta gaa aac tta tca aaa gca gct caa gac aca Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys Ala Ala Gln Asp Thr 370 375 380	1152
tta aaa aat gct gtt aaa gag ctt aca agt oc Leu Lys Asn Ala Val Lys Glu Leu Thr Ser 385 390	1184

<210> 68  
 <211> 394  
 <212> PRT  
 <213> ospC Chimera

<400> 68

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1           5           10           15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
 20           25           30
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
 35           40           45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
 50           55           60
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
 65           70           75           80
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn
 85           90           95
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser
 100          105          110
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu
 115          120          125
Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr
 130          135          140

Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp
 145          150          155          160
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp
 165          170          175
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu
 180          185          190
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr
 195          200          205
Ser Pro Val Val His Gly Asn Asn Ser Arg Lys Asp Gly Asn Ala Ser
 210          215          220
Thr Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile
 225          230          235          240
Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu
 245          250          255
Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile
 260          265          270
Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala Asn Gln Ser Lys Asn
 275          280          285
Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser Asp Leu Ile Ala Glu
 290          295          300

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Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys Glu Lys Ile Asp Thr
305                      310                      315                      320
Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys Leu Lys Ser Glu His
                      325                      330                      335
Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp Asn Ala Gln Arg Ala
                      340                      345                      350
Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly Ala Ala Glu Leu Glu
                      355                      360                      365
Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys Ala Ala Gln Asp Thr
                      370                      375                      380
Leu Lys Asn Ala Val Lys Glu Leu Thr Ser
385                      390

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<210> 69
<211> 1209
<212> DNA
<213> ospC Chimera

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<220>
<221> CDS
<222> (1)...(1209)

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<400> 69
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt      48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1                      5                      10                      15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa      96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
                20                      25                      30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct      144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
                35                      40                      45

aat ott aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta      192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
                50                      55                      60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gag ctt      240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
        65                      70                      75                      80

gct aaa gct att ggt aaa aaa ata aaa aac gat ggt agt tta gat aat      288
Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn
                85                      90                      95

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gaa gca aat cgc aac gag tca ttg tta gca gga gct tat aca ata tca	336
Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser	
100 105 110	
acc tta ata aca caa aaa tta agt aaa tta aac gga tca gaa ggt tta	384
Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu	
115 120 125	
aag gaa aag att gcc gca gct aag aaa tgc tct gaa gag ttt agt act	432
Lys Glu Lys Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr	
130 135 140	
aaa cta aaa gat aat cat gca cag ctt ggt ata cag ggc gtt act gat	480
Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp	
145 150 155 160	
gaa aat gca aaa aaa gct att tta aaa gca aat gca gcg ggt aaa gat	528
Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp	
165 170 175	
aag ggc gtt gaa gaa ctt gaa aag ttg tcc gga tca tta gaa agc tta	576
Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu	
180 185 190	
tca aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca	624
Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr	
195 200 205	
agc cct gtt gtc cat ggt aat aat tca ggt ggg gat tct gca tct act	672
Ser Pro Val Val His Gly Asn Asn Ser Gly Gly Asp Ser Ala Ser Thr	
210 215 220	
aat cct gat gag tct gca aaa gga cct aat ctt acc gta ata agc aaa	720
Asn Pro Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Val Ile Ser Lys	
225 230 235 240	
aaa att aca gat tct aat gca ttt tta ctg gct gtg aaa gaa gtt gag	768
Lys Ile Thr Asp Ser Asn Ala Phe Leu Leu Ala Val Lys Glu Val Glu	
245 250 255	
got ttg ott tca tot ata gat gaa ctt tct aaa gct att ggt aaa aaa	816
Ala Leu Leu Ser Ser Ile Asp Glu Leu Ser Lys Ala Ile Gly Lys Lys	
260 265 270	

ata aaa aat gat ggt act tta gat aac gaa gca aat cga aac gaa tca 864  
 Ile Lys Asn Asp Gly Thr Leu Asp Asn Glu Ala Asn Arg Asn Glu Ser  
 275 280 285

ttg ata gca gga gct tat gaa ata tca aaa cta ata aca caa aaa tta 912  
 Leu Ile Ala Gly Ala Tyr Glu Ile Ser Lys Leu Ile Thr Gln Lys Leu  
 290 295 300

agt gta ttg aat tca gaa gaa tta aag aaa aaa att aaa gag gct aag 960  
 Ser Val Leu Asn Ser Glu Glu Leu Lys Lys Lys Ile Lys Glu Ala Lys  
 305 310 315 320

gat tgt tcc caa aaa ttt act act aag cta aaa gat agt cat gca gag 1008  
 Asp Cys Ser Gln Lys Phe Thr Thr Lys Leu Lys Asp Ser His Ala Glu  
 325 330 335

ott ggt ata caa agc gtt cag gat gat aat gca aaa aaa gct att tta 1056  
 Leu Gly Ile Gln Ser Val Gln Asp Asp Asn Ala Lys Lys Ala Ile Leu  
 340 345 350

aaa aca cat gga act aaa gac aag ggt gct aaa gaa ctt gaa gag tta 1104  
 Lys Thr His Gly Thr Lys Asp Lys Gly Ala Lys Glu Leu Glu Glu Leu  
 355 360 365

ttt aaa tca cta gaa agc ttg tca aaa gca gcg caa gca gca tta act 1152  
 Phe Lys Ser Leu Glu Ser Leu Ser Lys Ala Ala Gln Ala Ala Leu Thr  
 370 375 380

aat tca gtt aaa gag ctt aca aat cct gtt gtg gca gaa agt cca aaa 1200  
 Asn Ser Val Lys Glu Leu Thr Asn Pro Val Val Ala Glu Ser Pro Lys  
 385 390 395 400

aaa cct taa 1209  
 Lys Pro \*

<210> 70  
 <211> 402  
 <212> PRT  
 <213> ospC Chimera

<400> 70  
 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
 1 5 10 15  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
 20 25 30

Asp	Gly	Asn	Thr	Ser	Ala	Asn	Ser	Ala	Asp	Glu	Ser	Val	Lys	Gly	Pro
		35					40					45			
Asn	Leu	Thr	Glu	Ile	Ser	Lys	Lys	Ile	Thr	Asp	Ser	Asn	Ala	Val	Leu
	50					55					60				
Leu	Ala	Val	Lys	Glu	Val	Glu	Ala	Leu	Leu	Ser	Ser	Ile	Asp	Glu	Leu
65					70					75					80
Ala	Lys	Ala	Ile	Gly	Lys	Lys	Ile	Lys	Asn	Asp	Gly	Ser	Leu	Asp	Asn
				85					90					95	
Glu	Ala	Asn	Arg	Asn	Glu	Ser	Leu	Leu	Ala	Gly	Ala	Tyr	Thr	Ile	Ser
		100						105					110		
Thr	Leu	Ile	Thr	Gln	Lys	Leu	Ser	Lys	Leu	Asn	Gly	Ser	Glu	Gly	Leu
		115					120					125			
Lys	Glu	Lys	Ile	Ala	Ala	Ala	Lys	Lys	Cys	Ser	Glu	Glu	Phe	Ser	Thr
	130					135					140				
Lys	Leu	Lys	Asp	Asn	His	Ala	Gln	Leu	Gly	Ile	Gln	Gly	Val	Thr	Asp
145				150						155					160
Glu	Asn	Ala	Lys	Lys	Ala	Ile	Leu	Lys	Ala	Asn	Ala	Ala	Gly	Lys	Asp
				165					170					175	
Lys	Gly	Val	Glu	Glu	Leu	Glu	Lys	Leu	Ser	Gly	Ser	Leu	Glu	Ser	Leu
		180						185					190		
Ser	Lys	Ala	Ala	Lys	Glu	Met	Leu	Ala	Asn	Ser	Val	Lys	Glu	Leu	Thr
		195					200					205			
Ser	Pro	Val	Val	His	Gly	Asn	Asn	Ser	Gly	Gly	Asp	Ser	Ala	Ser	Thr
	210					215					220				
Asn	Pro	Asp	Glu	Ser	Ala	Lys	Gly	Pro	Asn	Leu	Thr	Val	Ile	Ser	Lys
225					230					235					240
Lys	Ile	Thr	Asp	Ser	Asn	Ala	Phe	Leu	Leu	Ala	Val	Lys	Glu	Val	Glu
				245					250					255	
Ala	Leu	Leu	Ser	Ser	Ile	Asp	Glu	Leu	Ser	Lys	Ala	Ile	Gly	Lys	Lys
			260					265					270		
Ile	Lys	Asn	Asp	Gly	Thr	Leu	Asp	Asn	Glu	Ala	Asn	Arg	Asn	Glu	Ser
		275					280					285			
Leu	Ile	Ala	Gly	Ala	Tyr	Glu	Ile	Ser	Lys	Leu	Ile	Thr	Gln	Lys	Leu
	290					295					300				
Ser	Val	Leu	Asn	Ser	Glu	Glu	Leu	Lys	Lys	Lys	Ile	Lys	Glu	Ala	Lys
305					310					315					320
Asp	Cys	Ser	Gln	Lys	Phe	Thr	Thr	Lys	Leu	Lys	Asp	Ser	His	Ala	Glu
				325					330					335	
Leu	Gly	Ile	Gln	Ser	Val	Gln	Asp	Asp	Asn	Ala	Lys	Lys	Ala	Ile	Leu
			340					345					350		
Lys	Thr	His	Gly	Thr	Lys	Asp	Lys	Gly	Ala	Lys	Glu	Leu	Glu	Glu	Leu
		355					360					365			
Phe	Lys	Ser	Leu	Glu	Ser	Leu	Ser	Lys	Ala	Ala	Gln	Ala	Ala	Leu	Thr
	370					375					380				
As															

<210> 71  
 <211> 1179  
 <212> DNA  
 <213> ospC Chimera

<220>  
 <221> CDS  
 <222> (1)...(1179)

<400> 71  
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 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
 1 5 10 15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca gga aaa 96  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
 20 25 30

gat ggg aat gca tct gca aat tct gct gat gag tct gtt aaa ggg cct 144  
 Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
 35 40 45

aat ctt aca gaa ata agt aaa aaa att aca gaa tot aac gca gtt gtt 192  
 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val  
 50 55 60

ctg ggc gtg aaa gaa gtt gag acc tta ctt gca tct ata gat gaa ctt 240  
 Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu  
 65 70 75 80

gct acc aaa gct att ggt aaa aaa ata ggc aat aat ggt tta gag gcc 288  
 Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala  
 85 90 95

aat cag agt aaa aac aca tca ttg tta tca gga gct tat gca ata tct 336  
 Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser  
 100 105 110

gac cta ata gca gaa aaa tta aat gta ttg aaa aat gaa gaa tta aag 384  
 Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys  
 115 120 125

gaa aag att gat aca gct aag caa tgt tct aca gaa ttt act aat aaa 432  
 Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys  
 130 135 140

cta	aaa	agt	gaa	cat	gca	gtg	ctt	ggt	ctg	gac	aat	ctt	act	gat	gat	480
Leu	Lys	Ser	Glu	His	Ala	Val	Leu	Gly	Leu	Asp	Asn	Leu	Thr	Asp	Asp	
145					150					155					160	
aat	gca	caa	aga	gct	att	tta	aaa	aaa	cat	gca	aat	aaa	gat	aag	ggt	528
Asn	Ala	Gln	Arg	Ala	Ile	Leu	Lys	Lys	His	Ala	Asn	Lys	Asp	Lys	Gly	
				165					170					175		
gct	gca	gaa	ctt	gaa	aag	tta	ttt	aaa	gcg	gta	gaa	aac	tta	tca	aaa	576
Ala	Ala	Glu	Leu	Glu	Lys	Leu	Phe	Lys	Ala	Val	Glu	Asn	Leu	Ser	Lys	
			180					185					190			
gca	gct	caa	gac	aca	tta	aaa	aat	gct	ggt	aaa	gag	ctt	aca	agt	cct	624
Ala	Ala	Gln	Asp	Thr	Leu	Lys	Asn	Ala	Val	Lys	Glu	Leu	Thr	Ser	Pro	
		195				200						205				
att	gtc	cat	ggt	aat	aat	tca	ggg	aaa	gat	ggg	aat	aca	tct	gca	aat	672
Ile	Val	His	Gly	Asn	Asn	Ser	Gly	Lys	Asp	Gly	Asn	Thr	Ser	Ala	Asn	
	210					215					220					
tct	gct	gat	gag	tct	gtt	aaa	ggg	cct	aat	ctt	aca	gaa	ata	agt	aaa	720
Ser	Ala	Asp	Glu	Ser	Val	Lys	Gly	Pro	Asn	Leu	Thr	Glu	Ile	Ser	Lys	
225					230					235					240	
aaa	att	aca	gaa	tct	aac	gca	gtt	gtt	ctc	gcc	gtg	aaa	gaa	gtt	gaa	768
Lys	Ile	Thr	Glu	Ser	Asn	Ala	Val	Val	Leu	Ala	Val	Lys	Glu	Val	Glu	
			245						250				255			
act	ttg	ctt	aca	tct	ata	gat	gag	ctt	gct	aaa	gct	att	ggt	aaa	aaa	816
Thr	Leu	Leu	Thr	Ser	Ile	Asp	Glu	Leu	Ala	Lys	Ala	Ile	Gly	Lys	Lys	
			260					265					270			
ata	aaa	aac	gat	gtt	agt	tta	gat	aat	gag	gca	gat	cac	aac	gga	tca	864
Ile	Lys	Asn	Asp	Val	Ser	Leu	Asp	Asn	Glu	Ala	Asp	His	Asn	Gly	Ser	
		275				280						285				
tta	ata	tca	gga	gca	tat	tta	att	tca	aac	tta	ata	aca	aaa	aaa	ata	912
Leu	Ile	Ser	Gly	Ala	Tyr	Leu	Ile	Ser	Asn	Leu	Ile	Thr	Lys	Lys	Ile	
	290					295					300					
agt	gca	ata	aaa	gat	tca	gga	gaa	ttg	aag	gca	gaa	att	gaa	aag	gct	960
Ser	Ala	Ile	Lys	Asp	Ser	Gly	Glu	Leu	Lys	Ala	Glu	Ile	Glu	Lys	Ala	
305					310					315					320	
aag	aaa	tgt	tct	gaa	gaa	ttt	act	gct	aaa	tta	aaa	ggt	gaa	cac	aca	1008
Lys	Lys	Cys	Ser	Glu	Glu	Phe	Thr	Ala	Lys	Leu	Lys	Gly	Glu	His	Thr	
				325					330					335		

gat ctt ggt aaa gaa ggc gtt act gat gat aat gca aaa aaa gcc att 1056  
 Asp Leu Gly Lys Glu Gly Val Thr Asp Asp Asn Ala Lys Lys Ala Ile  
                   340                                  345                                  350

tta aaa aca aat aat gat aaa act aag ggc gct gat gaa ctt gaa aag 1104  
 Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly Ala Asp Glu Leu Glu Lys  
                   355                                  360                                  365

tta ttt gaa tca gta aaa aac ttg tca aaa gca gct aaa gag atg ctt 1152  
 Leu Phe Glu Ser Val Lys Asn Leu Ser Lys Ala Ala Lys Glu Met Leu  
                   370                                  375                                  380

act aat tca gtt aaa gag ctt aca agc 1179  
 Thr Asn Ser Val Lys Glu Leu Thr Ser  
                   385                                  390

<210> 72

<211> 393

<212> PRT

<213> ospC Chimera

<400> 72

Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
   1                                  5                                  10                                  15  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
                   20                                  25                                  30  
 Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
                   35                                  40                                  45  
 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val  
                   50                                  55                                  60  
 Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu  
                   65                                  70                                  75                                  80  
 Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala  
                   85                                  90                                  95  
 Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser  
                   100                                  105                                  110  
 Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys  
                   115                                  120                                  125  
 Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys  
                   130                                  135                                  140  
 Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp  
                   145                                  150                                  155                                  160  
 Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly  
                   165                                  170                                  175

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Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys
      180              185              190
Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro
      195              200              205
Ile Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn
      210              215              220
Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys
      225              230              235              240
Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu
      245              250              255
Thr Leu Leu Thr Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly Lys Lys
      260              265              270
Ile Lys Asn Asp Val Ser Leu Asp Asn Glu Ala Asp His Asn Gly Ser
      275              280              285
Leu Ile Ser Gly Ala Tyr Leu Ile Ser Asn Leu Ile Thr Lys Lys Ile
      290              295              300
Ser Ala Ile Lys Asp Ser Gly Glu Leu Lys Ala Glu Ile Glu Lys Ala
      305              310              315              320
Lys Lys Cys Ser Glu Glu Phe Thr Ala Lys Leu Lys Gly Glu His Thr
      325              330              335

Asp Leu Gly Lys Glu Gly Val Thr Asp Asp Asn Ala Lys Lys Ala Ile
      340              345              350
Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly Ala Asp Glu Leu Glu Lys
      355              360              365
Leu Phe Glu Ser Val Lys Asn Leu Ser Lys Ala Ala Lys Glu Met Leu
      370              375              380
Thr Asn Ser Val Lys Glu Leu Thr Ser
      385              390

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<210> 73
<211> 1178
<212> DNA
<213> ospC Chimera

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<220>
<221> CDS
<222> (1)...(1178)

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<400> 73
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt   48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
  1              5              10              15

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gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca gga aaa	96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys	
20 25 30	
gat ggg aat gca tct gca aat tot gct gat gag tct gtt aaa ggg cct	144
Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro	
35 40 45	
aat ctt aca gaa ata agt aaa aaa att aca gaa tct aac gca gtt gtt	192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val	
50 55 60	
ctg gcc gtg aaa gaa gtt gag acc tta ctt gca tct ata gat gaa ctt	240
Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu	
65 70 75 80	
gct acc aaa gct att ggt aaa aaa ata ggc aat aat ggt tta gag gcc	288
Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala	
85 90 95	
aat cag agt aaa aac aca tca ttg tta tca gga gct tat gca ata tct	336
Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser	
100 105 110	
gac cta ata gca gaa aaa tta aat gta ttg aaa aat gaa gaa tta aag	384
Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys	
115 120 125	
gaa aag att gat aca gct aag caa tgt tct aca gaa ttt act aat aaa	432
Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys	
130 135 140	
cta aaa agt gaa cat gca gtg ctt ggt ctg gac aat ctt act gat gat	480
Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp	
145 150 155 160	
aat gca caa aga gct att tta aaa aaa cat gca aat aaa gat aag ggt	528
Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly	
165 170 175	
gct gca gaa ctt gaa aag tta ttt aaa gcg gta gaa aac tta tca aaa	576
Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys	
180 185 190	
gca gct caa gac aca tta aaa aat gct gtt aaa gag ctt aca agt cct	624
Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro	
195 200 205	



att gtc cat ggt aat aat tca gga aaa gat ggg aat aca tct gca aat	672
Ile Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn	
210 215 220	
tct gct gat gag tct gtt aaa ggg cct aat ctt aca gaa ata agt aaa	720
Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys	
225 230 235 240	
aaa att aca gaa tct aac gca gtt gtt ctg gct gtg aaa gaa att gaa	768
Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Ile Glu	
245 250 255	
act ttg ctt gca tot ata gat gaa ctt gct act aaa gct att ggt aaa	816
Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile Gly Lys	
260 265 270	
aaa ata caa caa aat ggt ggt tta gct gtc gaa gcg ggg cat aat gga	864
Lys Ile Gln Gln Asn Gly Gly Leu Ala Val Glu Ala Gly His Asn Gly	
275 280 285	
aca ttg tta gca ggt gct tat aca ata tca aaa cta ata aca caa aaa	912
Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser Lys Leu Ile Thr Gln Lys	
290 295 300	
tta gat gga ttg aaa aat tca gaa aaa tta aag gaa aaa att gaa aat	960
Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu Lys Glu Lys Ile Glu Asn	
305 310 315 320	
gct aag aaa tgt tct gaa gat ttt act aaa aaa cta gaa gga gaa cat	1008
Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys Lys Leu Glu Gly Glu His	
325 330 335	
gcg caa ctt gga att gaa aat gtt act gat gag aat gca aaa aaa gct	1056
Ala Gln Leu Gly Ile Glu Asn Val Thr Asp Glu Asn Ala Lys Lys Ala	
340 345 350	
att tta ata aca gat gca gct aaa gat aag ggc gct gca gag ctt gaa	1104
Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys Gly Ala Ala Glu Leu Glu	
355 360 365	
aag cta ttt aaa gca gta gaa aac ttg gca aaa gca gct aaa gag atg	1152
Lys Leu Phe Lys Ala Val Glu Asn Leu Ala Lys Ala Ala Lys Glu Met	
370 375 380	

ctt gct aat tca gtt aaa gag ctt ac  
 Leu Ala Asn Ser Val Lys Glu Leu  
 385 390

1178

<210> 74  
 <211> 392  
 <212> PRT  
 <213> ospC Chimera

<400> 74  
 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
 1 5 10 15  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
 20 25 30  
 Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
 35 40 45  
 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val  
 50 55 60  
 Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu  
 65 70 75 80  
 Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala  
 85 90 95  
 Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser  
 100 105 110  
 Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys  
 115 120 125  
 Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys  
 130 135 140  
 Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp  
 145 150 155 160  
 Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly  
 165 170 175  
 Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys  
 180 185 190  
 Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro  
 195 200 205  
 Ile Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn  
 210 215 220  
 Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys  
 225 230 235 240  
 Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Ile Glu  
 245 250 255  
 Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile Gly Lys  
 260 265 270

Lys Ile Gln Gln Asn Gly Gly Leu Ala Val Glu Ala Gly His Asn Gly  
           275                                  280                                  285  
 Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser Lys Leu Ile Thr Gln Lys  
           290                                  295                                  300  
 Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu Lys Glu Lys Ile Glu Asn  
 305                                  310                                  315                                  320  
 Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys Lys Leu Glu Gly Glu His  
                                   325                                  330                                  335  
 Ala Gln Leu Gly Ile Glu Asn Val Thr Asp Glu Asn Ala Lys Lys Ala  
                                   340                                  345                                  350  
 Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys Gly Ala Ala Glu Leu Glu  
                                   355                                  360                                  365  
 Lys Leu Phe Lys Ala Val Glu Asn Leu Ala Lys Ala Ala Lys Glu Met  
           370                                  375                                  380  
 Leu Ala Asn Ser Val Lys Glu Leu  
 385                                  390

<210> 75  
 <211> 1178  
 <212> DNA  
 <213> ospC Chimera

<220>  
 <221> CDS  
 <222> (1)...(1178)

<400> 75  
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 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
   1                                  5                                  10                                  15  
  
 goa caa aaa ggt gct gag tca att gga tcc tgt aat aat tca gga aaa 96  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
                                   20                                  25                                  30  
  
 gat ggg aat gca tot gca aat tct gct gat gag tct gtt aaa ggg cot 144  
 Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
                                   35                                  40                                  45  
  
 aat ctt aca gaa ata agt aaa aaa att aca gaa tct aac gca gtt gtt 192  
 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val  
                                   50                                  55                                  60  
  
 ctg gcc gtg aaa gaa gtt gag acc tta ctt gca tct ata gat gaa ctt 240  
 Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu  
   65                                  70                                  75                                  80

gct acc aaa gct att ggt aaa aaa ata ggc aat aat ggt tta gag gcc	288
Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala	
85 90 95	
aat cag agt aaa aac aca tca ttg tta tca gga gct tat gca ata tct	336
Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser	
100 105 110	
gac cta ata gca gaa aaa tta aat gta ttg aaa aat gaa gaa tta aag	384
Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys	
115 120 125	
gaa aag att gat aca gct aag caa tgt tct aca gaa ttt act aat aaa	432
Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys	
130 135 140	
cta aaa agt gaa cat gca gtg ctt ggt otg gac aat ctt act gat gat	480
Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp	
145 150 155 160	
aat gca caa aga gct att tta aaa aaa cat gca aat aaa gat aag ggt	528
Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly	
165 170 175	
gct gca gaa ctt gaa aag tta ttt aaa gcg gta gaa aac tta tca aaa	576
Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys	
180 185 190	
gca gct caa gac aca tta aaa aat gct gtt aaa gag ctt aca agt cct	624
Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro	
195 200 205	
att gtc cat ggt aat aat tca aga aaa gat ggg aat gca tct aca aat	672
Ile Val His Gly Asn Asn Ser Arg Lys Asp Gly Asn Ala Ser Thr Asn	
210 215 220	
tct gcc gat gag tct gtt aaa ggg cct aat ctt aca gaa ata agt aaa	720
Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys	
225 230 235 240	
aaa att aca gaa tct aac gca gtt gtt ctg gcc gtg aaa gaa gtt gag	768
Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu	
245 250 255	

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acc tta ctt gca tct ata gat gaa ctt gct acc aaa gct att ggt aag      816
Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile Gly Lys
      260                      265                      270

aaa ata ggc aat aat ggt tta gag gcc aat cag agt aaa aac aca tca      864
Lys Ile Gly Asn Asn Gly Leu Glu Ala Asn Gln Ser Lys Asn Thr Ser
      275                      280                      285

ttg tta tca gga gct tat gca ata tct gac cta ata gca gaa aaa tta      912
Leu Leu Ser Gly Ala Tyr Ala Ile Ser Asp Leu Ile Ala Glu Lys Leu
      290                      295                      300

aat gta ttg aaa aat gaa gaa tta aag gaa aag att gat aca gct aag      960
Asn Val Leu Lys Asn Glu Glu Leu Lys Glu Lys Ile Asp Thr Ala Lys
      305                      310                      315                      320

caa tgt tct aca gaa ttt act aat aaa cta aaa agt gaa cat gca gtg      1008
Gln Cys Ser Thr Glu Phe Thr Asn Lys Leu Lys Ser Glu His Ala Val
      325                      330                      335

ctt ggt ctg gac aat ctt act gat gat aat gca caa aga gct att tta      1056
Leu Gly Leu Asp Asn Leu Thr Asp Asp Asn Ala Gln Arg Ala Ile Leu
      340                      345                      350

aaa aaa cat gca aat aaa gat aag ggt gct gca gaa ctt gaa aag tta      1104
Lys Lys His Ala Asn Lys Asp Lys Gly Ala Ala Glu Leu Glu Lys Leu
      355                      360                      365

ttt aaa gcg gta gaa aac tta tca aaa gca gct caa gac aca tta aaa      1152
Phe Lys Ala Val Glu Asn Leu Ser Lys Ala Ala Gln Asp Thr Leu Lys
      370                      375                      380

aat gct gtt aaa gag ctt aca agt cc                                  1178
Asn Ala Val Lys Glu Leu Thr Ser
      385                      390

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<210> 76

<211> 392

<212> PRT

<213> ospC Chimera

<400> 76

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1           5           10           15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
      20                      25                      30

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Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
    35              40              45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val
    50              55              60
Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu
    65              70              75              80

Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala
    85              90              95
Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser
    100             105             110
Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys
    115             120             125
Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys
    130             135             140
Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp
    145             150             155             160
Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly
    165             170             175
Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys
    180             185             190
Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro
    195             200             205
Ile Val His Gly Asn Asn Ser Arg Lys Asp Gly Asn Ala Ser Thr Asn
    210             215             220
Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys
    225             230             235             240
Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu
    245             250             255
Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile Gly Lys
    260             265             270
Lys Ile Gly Asn Asn Gly Leu Glu Ala Asn Gln Ser Lys Asn Thr Ser
    275             280             285
Leu Leu Ser Gly Ala Tyr Ala Ile Ser Asp Leu Ile Ala Glu Lys Leu
    290             295             300
Asn Val Leu Lys Asn Glu Glu Leu Lys Glu Lys Ile Asp Thr Ala Lys
    305             310             315             320
Gln Cys Ser Thr Glu Phe Thr Asn Lys Leu Lys Ser Glu His Ala Val
    325             330             335
Leu Gly Leu Asp Asn Leu Thr Asp Asp Asn Ala Gln Arg Ala Ile Leu
    340             345             350
Lys Lys His Ala Asn Lys Asp Lys Gly Ala Ala Glu Leu Glu Lys Leu
    355             360             365
Phe Lys Ala Val Glu Asn Leu Ser Lys Ala Ala Gln Asp Thr Leu Lys
    370             375             380
Asn Ala Val Lys Glu Leu Thr Ser
    385             390

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<210> 77  
 <211> 1230  
 <212> DNA  
 <213> ospC Chimera

<220>  
 <221> CDS  
 <222> (1)...(1230)

<400> 77  
 atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt 48  
 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
 1 5 10 15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa 96  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
 20 25 30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct 144  
 Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
 35 40 45

aat ctt aca gaa ata agt aaa aaa att aag gat tct aat gcg gtt tta 192  
 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu  
 50 55 60

ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gaa att 240  
 Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile  
 65 70 75 80

gct gct aaa gct att ggt aaa aaa ata cac caa aat aat ggt ttg gat 288  
 Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp  
 85 90 95

acc gaa tat aat cac aat gga tca ttg tta gcg gga gct tat gca ata 336  
 Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile  
 100 105 110

tca acc cta ata aaa caa aaa tta gat gga ttg aaa aat gaa gga tta 384  
 Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu  
 115 120 125

aag gaa aaa att gat gcg gct aag aaa tgt tct gaa aca ttt act aat 432

Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn	
130	135 140
aaa tta aaa gaa aaa cac aca gat ctt ggt aaa gaa ggt gtt act gat	480
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp	
145	150 155 160
gct gat gca aaa gaa gcc att tta aaa aca aat ggt act aaa act aaa	528
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys	
	165 170 175
ggt gct gaa gaa ctt gga aaa tta ttt gaa tca gta gag gtc ttg tca	576
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser	
	180 185 190
aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca agc	624
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser	
	195 200 205
cct gtt gtg gca gaa agt cca aaa aaa cct ttc cat ggt aat aat tca	672
Pro Val Val Ala Glu Ser Pro Lys Lys Pro Phe His Gly Asn Asn Ser	
	210 215 220
ggt ggg gat tct gca tct act aat cct gat gag tct gca aaa gga cct	720
Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp Glu Ser Ala Lys Gly Pro	
	225 230 235 240
aat ctt acc gta ata agc aaa aaa att aca gat tct aat gca ttt tta	768
Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe Leu	
	245 250 255
ctg gct gtg aaa gaa gtt gag gct ttg ctt tca tct ata gat gaa ctt	816
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu	
	260 265 270
tct aaa gct att ggt aaa aaa ata aaa aat gat ggt act tta gat aac	864
Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu Asp Asn	
	275 280 285
gaa gca aat cga aac gaa tca ttg ata gca gga gct tat gaa ata tca	912
Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu Ile Ser	
	290 295 300
aaa cta ata aca caa aaa tta agt gta ttg aat tca gaa gaa tta aag	960
Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu Leu Lys	
	305 310 315 320



aaa aaa att aaa gag gct aag gat tgt tcc caa aaa ttt act act aag 1008  
 Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr Thr Lys  
                   325                                  330                                  335

cta aaa gat agt cat gca gag ctt ggt ata caa agc gtt cag gat gat 1056  
 Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln Asp Asp  
                   340                                  345                                  350

aat gca aaa aaa gct att tta aaa aca cat gga act aaa gac aag ggt 1104  
 Asn Ala Lys Lys Ala Ile Leu Lys Thr His Gly Thr Lys Asp Lys Gly  
                   355                                  360                                  365

gct aaa gaa ctt gaa gag tta ttt aaa tca cta gaa agc ttg tca aaa 1152  
 Ala Lys Glu Leu Glu Glu Leu Phe Lys Ser Leu Glu Ser Leu Ser Lys  
                   370                                  375                                  380

gca gcg caa gca gca tta act aat tca gtt aaa gag ctt aca aat cct 1200  
 Ala Ala Gln Ala Ala Leu Thr Asn Ser Val Lys Glu Leu Thr Asn Pro  
                   385                                  390                                  395                                  400

gtt gtg gca gaa agt cca aaa aaa cct taa 1230  
 Val Val Ala Glu Ser Pro Lys Lys Pro \*  
                                   405

<210> 78  
 <211> 409  
 <212> PRT  
 <213> ospC Chimera

<400> 78  
 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
   1                  5                                  10                                  15  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
                   20                                  25                                  30  
 Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
                   35                                  40                                  45  
 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu  
                   50                                  55                                  60  
 Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile  
                   65                                  70                                  75                                  80  
 Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp  
                   85                                  90                                  95  
 Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile  
                   100                                  105                                  110  
 Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu  
                   115                                  120                                  125

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Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
130                      135                      140

Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
145                      150                      155                      160
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
165                      170                      175
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
180                      185                      190
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
195                      200                      205
Pro Val Val Ala Glu Ser Pro Lys Lys Pro Phe His Gly Asn Asn Ser
210                      215                      220
Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp Glu Ser Ala Lys Gly Pro
225                      230                      235                      240
Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe Leu
245                      250                      255
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu
260                      265                      270
Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu Asp Asn
275                      280                      285
Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu Ile Ser
290                      295                      300
Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu Leu Lys
305                      310                      315                      320
Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr Thr Lys
325                      330                      335
Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln Asp Asp
340                      345                      350
Asn Ala Lys Lys Ala Ile Leu Lys Thr His Gly Thr Lys Asp Lys Gly
355                      360                      365
Ala Lys Glu Leu Glu Glu Leu Phe Lys Ser Leu Glu Ser Leu Ser Lys
370                      375                      380
Ala Ala Gln Ala Ala Leu Thr Asn Ser Val Lys Glu Leu Thr Asn Pro
385                      390                      395                      400
Val Val Ala Glu Ser Pro Lys Lys Pro
405

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<210> 79
<211> 1209
<212> DNA
<213> ospC Chimera

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<220>
<221> CDS
<222> (1) ... (1209)

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&lt;400&gt; 79

atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt	48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys	
1 5 10 15	
gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa	96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys	
20 25 30	
gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cot	144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro	
35 40 45	
aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta	192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu	
50 55 60	
ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gaa att	240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile	
65 70 75 80	
gct gct aaa gct att ggt aaa aaa ata cac caa aat aat ggt ttg gat	288
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp	
85 90 95	
acc gaa tat aat cac aat gga tca ttg tta gcg gga gct tat gca ata	336
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile	
100 105 110	
tca acc cta ata aaa caa aaa tta gat gga ttg aaa aat gaa gga tta	384
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu	
115 120 125	
aag gaa aaa att gat gcg gct aag aaa tgt tct gaa aca ttt act aat	432
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn	
130 135 140	
aaa tta aaa gaa aaa cac aca gat ctt ggt aaa gaa ggt gtt act gat	480
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp	
145 150 155 160	
gct gat gca aaa gaa gcc att tta aaa aca aat ggt act aaa act aaa	528
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys	
165 170 175	
ggt gct gaa gaa ctt gga aaa tta ttt gaa tca gta gag gtc ttg tca	576

Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser	
180	185 190
aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca agc	624
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser	
195	200 205
cot gtt gtg gca gaa agt cca aaa aaa cct tcc atg gta aat aat tca	672
Pro Val Val Ala Glu Ser Pro Lys Lys Pro Ser Met Val Asn Asn Ser	
210	215 220
ggg aaa gat ggg aat aca tct gca aat tct gct gat gag tot gtt aaa	720
Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys	
225	230 235 240
ggg cct aat ctt aca gaa ata agt aaa aaa att aca gaa tot aac gca	768
Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala	
245	250 255
gtt gtt ctc gcc gtg aaa gaa gtt gaa act ttg ctt aca tct ata gat	816
Val Val Leu Ala Val Lys Glu Val Glu Thr Leu Leu Thr Ser Ile Asp	
260	265 270
gag ctt gct aaa gct att ggt aaa aaa ata aaa aac gat gtt agt tta	864
Glu Leu Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Val Ser Leu	
275	280 285
gat aat gag gca gat cac aac gga tca tta ata tca gga gca tat tta	912
Asp Asn Glu Ala Asp His Asn Gly Ser Leu Ile Ser Gly Ala Tyr Leu	
290	295 300
att tca aac tta ata aca aaa aaa ata agt gca ata aaa gat tca gga	960
Ile Ser Asn Leu Ile Thr Lys Lys Ile Ser Ala Ile Lys Asp Ser Gly	
305	310 315 320
gaa ttg aag gca gaa att gaa aag gct aag aaa tgt tct gaa gaa ttt	1008
Glu Leu Lys Ala Glu Ile Glu Lys Ala Lys Lys Cys Ser Glu Glu Phe	
325	330 335
act gct aaa tta aaa ggt gaa cac aca gat ctt ggt aaa gaa ggc gtt	1056
Thr Ala Lys Leu Lys Gly Glu His Thr Asp Leu Gly Lys Glu Gly Val	
340	345 350
act gat gat aat gca aaa aaa gcc att tta aaa aca aat aat gat aaa	1104
Thr Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr Asn Asn Asp Lys	
355	360 365

act aag ggc gct gat gaa ctt gaa aag tta ttt gaa tca gta aaa aac 1152  
 Thr Lys Gly Ala Asp Glu Leu Glu Lys Leu Phe Glu Ser Val Lys Asn  
 370 375 380

ttg tca aaa gca gct aaa gag atg ctt act aat tca gtt aaa gag ctt 1200  
 Leu Ser Lys Ala Ala Lys Glu Met Leu Thr Asn Ser Val Lys Glu Leu  
 385 390 395 400

aca agc taa 1209  
 Thr Ser \*

<210> 80  
 <211> 402  
 <212> PRT  
 <213> ospC Chimera

<400> 80  
 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
 1 5 10 15  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys  
 20 25 30  
 Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro  
 35 40 45  
 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu  
 50 55 60  
 Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile  
 65 70 75 80  
 Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp  
 85 90 95  
 Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile  
 100 105 110  
 Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu  
 115 120 125  
 Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn  
 130 135 140  
 Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp  
 145 150 155 160  
 Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys  
 165 170 175  
 Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser  
 180 185 190  
 Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser  
 195 200 205  
 Pro Val Val Ala Glu Ser Pro Lys Lys Pro Ser Met Val Asn Asn Ser  
 210 215 220

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Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys
225                230                235                240
Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala
                245                250                255
Val Val Leu Ala Val Lys Glu Val Glu Thr Leu Leu Thr Ser Ile Asp
                260                265                270
Glu Leu Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Val Ser Leu
                275                280                285
Asp Asn Glu Ala Asp His Asn Gly Ser Leu Ile Ser Gly Ala Tyr Leu
290                295                300
Ile Ser Asn Leu Ile Thr Lys Lys Ile Ser Ala Ile Lys Asp Ser Gly
305                310                315                320
Glu Leu Lys Ala Glu Ile Glu Lys Ala Lys Lys Cys Ser Glu Glu Phe
                325                330                335
Thr Ala Lys Leu Lys Gly Glu His Thr Asp Leu Gly Lys Glu Gly Val
                340                345                350
Thr Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr Asn Asn Asp Lys
                355                360                365
Thr Lys Gly Ala Asp Glu Leu Glu Lys Leu Phe Glu Ser Val Lys Asn
370                375                380
Leu Ser Lys Ala Ala Lys Glu Met Leu Thr Asn Ser Val Lys Glu Leu
385                390                395                400
Thr Ser

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<210> 81
<211> 1205
<212> DNA
<213> ospC Chimera

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<220>
<221> CDS
<222> (1)...(1205)

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<400> 81
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt      48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1                5                10                15

gca caa aaa ggt gct gag tca att gga tcc tgt aat aat tca ggg aaa      96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
                20                25                30

gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa ggg cct      144
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
35                40                45

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aat ctt aca gaa ata agt aaa aaa att acg gat tct aat gcg gtt tta	192
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu	
50 55 60	
ctt gct gtg aaa gag gtt gaa gcg ttg ctg tca tct ata gat gaa att	240
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile	
65 70 75 80	
gct gct aaa gct att ggt aaa aaa ata cac caa aat aat ggt ttg gat	288
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp	
85 90 95	
acc gaa tat aat cac aat gga tca ttg tta gcg gga gct tat gca ata	336
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile	
100 105 110	
tca acc cta ata aaa caa aaa tta gat gga ttg aaa aat gaa gga tta	384
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu	
115 120 125	
aag gaa aaa att gat gcg gct aag aaa tgt tct gaa aca ttt act aat	432
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn	
130 135 140	
aaa tta aaa gaa aaa cac aca gat ctt ggt aaa gaa ggt gtt act gat	480
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp	
145 150 155 160	
gct gat gca aaa gaa gcc att tta aaa aca aat ggt act aaa act aaa	528
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys	
165 170 175	
ggt gct gaa gaa ctt gga aaa tta ttt gaa tca gta gag gtc ttg tca	576
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser	
180 185 190	
aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag ctt aca agc	624
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser	
195 200 205	
cct gtt gtg gca gaa agt cca aaa aaa cct tcc atg gta aat aat tca	672
Pro Val Val Ala Glu Ser Pro Lys Lys Pro Ser Met Val Asn Asn Ser	
210 215 220	
gga aaa gat ggg aat aca tct gca aat tct gct gat gag tct gtt aaa	720
Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys	
225 230 235 240	

ggg cct aat ctt aca gaa ata agt aaa aaa att aca gaa tct aac gca	768
Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala	
245 250 255	
ggt gtt ctg gct gtg aaa gaa att gaa act ttg ctt gca tct ata gat	816
Val Val Leu Ala Val Lys Glu Ile Glu Thr Leu Leu Ala Ser Ile Asp	
260 265 270	
gaa ctt gct act aaa gct att ggt aaa aaa ata caa caa aat ggt ggt	864
Glu Leu Ala Thr Lys Ala Ile Gly Lys Lys Ile Gln Gln Asn Gly Gly	
275 280 285	
tta gct gtc gaa gcg ggg cat aat gga aca ttg tta gca ggt gct tat	912
Leu Ala Val Glu Ala Gly His Asn Gly Thr Leu Leu Ala Gly Ala Tyr	
290 295 300	
aca ata tca aaa cta ata aca caa aaa tta gat gga ttg aaa aat tca	960
Thr Ile Ser Lys Leu Ile Thr Gln Lys Leu Asp Gly Leu Lys Asn Ser	
305 310 315 320	
gaa aaa tta aag gaa aaa att gaa aat gct aag aaa tgt tct gaa gat	1008
Glu Lys Leu Lys Glu Lys Ile Glu Asn Ala Lys Lys Cys Ser Glu Asp	
325 330 335	
ttt act aaa aaa cta gaa gga gaa cat gcg caa ctt gga att gaa aat	1056
Phe Thr Lys Lys Leu Glu Gly Glu His Ala Gln Leu Gly Ile Glu Asn	
340 345 350	
ggt act gat gag aat gca aaa aaa gct att tta ata aca gat gca gct	1104
Val Thr Asp Glu Asn Ala Lys Lys Ala Ile Leu Ile Thr Asp Ala Ala	
355 360 365	
aaa gat aag ggc gct gca gag ctt gaa aag cta ttt aaa gca gta gaa	1152
Lys Asp Lys Gly Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu	
370 375 380	
aac ttg gca aaa gca gct aaa gag atg ctt gct aat tca gtt aaa gag	1200
Asn Leu Ala Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu	
385 390 395 400	
ctt ac	1205
Leu	



<210> 82  
 <211> 401  
 <212> PRT  
 <213> ospC Chimera

<400> 82

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Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys
 1           5           10           15
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys
 20           25           30
Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro
 35           40           45
Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu
 50           55           60
Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile
 65           70           75           80
Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp
 85           90           95
Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile
 100          105          110
Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu
 115          120          125
Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn
 130          135          140
Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp
 145          150          155          160
Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys
 165          170          175
Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser
 180          185          190
Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser
 195          200          205
Pro Val Val Ala Glu Ser Pro Lys Lys Pro Ser Met Val Asn Asn Ser
 210          215          220
Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys
 225          230          235          240
Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala
 245          250          255
Val Val Leu Ala Val Lys Glu Ile Glu Thr Leu Leu Ala Ser Ile Asp
 260          265          270
Glu Leu Ala Thr Lys Ala Ile Gly Lys Lys Ile Gln Gln Asn Gly Gly
 275          280          285
Leu Ala Val Glu Ala Gly His Asn Gly Thr Leu Leu Ala Gly Ala Tyr
 290          295          300
Thr Ile Ser Lys Leu Ile Thr Gln Lys Leu Asp Gly Leu Lys Asn Ser
 305          310          315          320

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Glu Lys Leu Lys Glu Lys Ile Glu Asn Ala Lys Lys Cys Ser Glu Asp
      325              330              335
Phe Thr Lys Lys Leu Glu Gly Glu His Ala Gln Leu Gly Ile Glu Asn
      340              345              350
Val Thr Asp Glu Asn Ala Lys Lys Ala Ile Leu Ile Thr Asp Ala Ala
      355              360              365
Lys Asp Lys Gly Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu
      370              375              380
Asn Leu Ala Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu
      385              390              395              400
Leu

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<210> 83
<211> 1236
<212> DNA
<213> ospC Chimera

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<220>
<221> CDS
<222> (1)...(1236)

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<400> 83
atg aga tta tta ata gga ttt gct tta gcg tta gct tta ata gga tgt 48
Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ile Gly Cys
1          5          10          15

gca caa aaa ggt gct gag tca att gga tcc tgt agt aat tca ggg aaa 96
Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Ser Asn Ser Gly Lys
20          25          30

ggg ggg gat tct gca tct act aat cct gct gac gag tct gcg aaa ggg 144
Gly Gly Asp Ser Ala Ser Thr Asn Pro Ala Asp Glu Ser Ala Lys Gly
35          40          45

cct aat ctt aca gaa ata agc aaa aaa att aca gat tct aat gca ttt 192
Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe
50          55          60

gta ctt gct gtt aaa gaa gtt gag act ttg gtt tta tct ata gat gaa 240
Val Leu Ala Val Lys Glu Val Glu Thr Leu Val Leu Ser Ile Asp Glu
65          70          75          80

ctt gct aag aaa gct att ggt caa aaa ata gac aat aat aat ggt tta 288
Leu Ala Lys Lys Ala Ile Gly Gln Lys Ile Asp Asn Asn Asn Gly Leu
85          90          95

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gct gct tta aat aat cag aat gga tct ttg tta gca gga gcc tat gca	336
Ala Ala Leu Asn Asn Gln Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala	
100 105 110	
ata tca acc cta ata aca gaa aaa ttg agt aaa ttg aaa aat tta gaa	384
Ile Ser Thr Leu Ile Thr Glu Lys Leu Ser Lys Leu Lys Asn Leu Glu	
115 120 125	
gaa tta aag aca gaa att gca aag gct aag aaa tgt tcc gaa gaa ttt	432
Glu Leu Lys Thr Glu Ile Ala Lys Ala Lys Lys Cys Ser Glu Glu Phe	
130 135 140	
act aat aaa cta aaa agt ggt oat gca gat ctt ggc aaa cag gat gct	480
Thr Asn Lys Leu Lys Ser Gly His Ala Asp Leu Gly Lys Gln Asp Ala	
145 150 155 160	
acc gat gat cat gca aaa gca gct att tta aaa aca cat gca act acc	528
Thr Asp Asp His Ala Lys Ala Ala Ile Leu Lys Thr His Ala Thr Thr	
165 170 175	
gat aaa ggt gct aaa gaa ttt aaa gat tta ttt gaa tca gta gaa ggt	576
Asp Lys Gly Ala Lys Glu Phe Lys Asp Leu Phe Glu Ser Val Glu Gly	
180 185 190	
ttg tta aaa gca gct caa gta gca cta act aat tca gtt aaa gaa ctt	624
Leu Leu Lys Ala Ala Gln Val Ala Leu Thr Asn Ser Val Lys Glu Leu	
195 200 205	
aca agt cct gtt gta gca gaa agt cca aaa aaa cct cat atg gct aat	672
Thr Ser Pro Val Val Ala Glu Ser Pro Lys Lys Pro His Met Ala Asn	
210 215 220	
aat tca ggt ggg gat tot gca tot act aat cct gat gag tot gca aaa	720
Asn Ser Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp Glu Ser Ala Lys	
225 230 235 240	
gga cct aat ctt acc gta ata agc aaa aaa att aca gat tot aat gca	768
Gly Pro Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala	
245 250 255	
ttt tta ctg gct gtg aaa gaa gtt gag gct ttg ctt tca tct ata gat	816
Phe Leu Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp	
260 265 270	
gaa ctt tct aaa gct att ggt aaa aaa ata aaa aat gat ggt act tta	864
Glu Leu Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu	
275 280 285	

gat aac gaa gca aat cga aac gaa tca ttg ata gca gga gct tat gaa 912  
 Asp Asn Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu  
 290 295 300

ata tca aaa cta ata aca caa aaa tta agt gta ttg aat tca gaa gaa 960  
 Ile Ser Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu  
 305 310 315 320

tta aag aaa aaa att aaa gag gct aag gat tgt tcc caa aaa ttt act 1008  
 Leu Lys Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr  
 325 330 335

aot aag cta aaa gat agt cat gca gag ctt ggt ata caa agc gtt cag 1056  
 Thr Lys Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln  
 340 345 350

gat gat aat gca aaa aaa gct att tta aaa aca cat gga act aaa gac 1104  
 Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr His Gly Thr Lys Asp  
 355 360 365

nag ggt gct aaa gaa ctt gaa gag tta ttt aaa tca cta gaa agc ttg 1152  
 Lys Gly Ala Lys Glu Leu Glu Glu Leu Phe Lys Ser Leu Glu Ser Leu  
 370 375 380

tca aaa gca gcg caa gca gca tta act aat tca gtt aaa gag ctt aca 1200  
 Ser Lys Ala Ala Gln Ala Ala Leu Thr Asn Ser Val Lys Glu Leu Thr  
 385 390 395 400

aat cct gtt gtg gca gaa agt cca aaa aaa cct taa 1236  
 Asn Pro Val Val Ala Glu Ser Pro Lys Lys Pro \*  
 405 410

<210> 84  
 <211> 411  
 <212> PRT  
 <213> ospC Chimera

<400> 84  
 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys  
 1 5 10 15  
 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Ser Asn Ser Gly Lys  
 20 25 30  
 Gly Gly Asp Ser Ala Ser Thr Asn Pro Ala Asp Glu Ser Ala Lys Gly  
 35 40 45

Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe  
 50 55 60  
 Val Leu Ala Val Lys Glu Val Glu Thr Leu Val Leu Ser Ile Asp Glu  
 65 70 75 80  
 Leu Ala Lys Lys Ala Ile Gly Gln Lys Ile Asp Asn Asn Asn Gly Leu  
 85 90 95  
 Ala Ala Leu Asn Asn Gln Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala  
 100 105 110  
 Ile Ser Thr Leu Ile Thr Glu Lys Leu Ser Lys Leu Lys Asn Leu Glu  
 115 120 125  
 Glu Leu Lys Thr Glu Ile Ala Lys Ala Lys Lys Cys Ser Glu Glu Phe  
 130 135 140  
 Thr Asn Lys Leu Lys Ser Gly His Ala Asp Leu Gly Lys Gln Asp Ala  
 145 150 155 160  
 Thr Asp Asp His Ala Lys Ala Ala Ile Leu Lys Thr His Ala Thr Thr  
 165 170 175  
 Asp Lys Gly Ala Lys Glu Phe Lys Asp Leu Phe Glu Ser Val Glu Gly  
 180 185 190  
 Leu Leu Lys Ala Ala Gln Val Ala Leu Thr Asn Ser Val Lys Glu Leu  
 195 200 205  
 Thr Ser Pro Val Val Ala Glu Ser Pro Lys Lys Pro His Met Ala Asn  
 210 215 220  
 Asn Ser Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp Glu Ser Ala Lys  
 225 230 235 240  
 Gly Pro Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala  
 245 250 255  
 Phe Leu Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp  
 260 265 270  
 Glu Leu Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu  
 275 280 285  
 Asp Asn Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu  
 290 295 300  
 Ile Ser Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu  
 305 310 315 320  
 Leu Lys Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr  
 325 330 335  
 Thr Lys Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln  
 340 345 350  
 Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr His Gly Thr Lys Asp  
 355 360 365  
 Lys Gly Ala Lys Glu Leu Glu Glu Leu Phe Lys Ser Leu Glu Ser Leu  
 370 375 380  
 Ser Lys Ala Ala Gln Ala Ala Leu Thr Asn Ser Val Lys Glu Leu Thr  
 385 390 395 400  
 Asn Pro Val Val Ala Glu Ser Pro Lys Lys Pro  
 405 410

<210> 85  
 <211> 192  
 <212> PRT  
 <213> borrelia burgdorferi

<400> 85  
 Cys Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp  
 1 5 10 15  
 Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr  
 20 25 30  
 Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu Thr Leu Leu  
 35 40 45  
 Thr Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn  
 50 55 60  
 Asp Val Ser Leu Asp Asn Glu Ala Asp His Asn Gly Ser Leu Ile Ser  
 65 70 75 80  
 Gly Ala Tyr Leu Ile Ser Thr Leu Ile Thr Lys Lys Ile Ser Ala Ile  
 85 90 95  
 Lys Asp Ser Gly Glu Leu Lys Ala Glu Ile Glu Lys Ala Lys Lys Cys  
 100 105 110  
 Ser Glu Glu Phe Thr Ala Lys Leu Lys Gly Glu His Thr Asp Leu Gly  
 115 120 125  
 Lys Glu Gly Val Thr Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr  
 130 135 140  
 Asn Asn Asp Lys Thr Lys Gly Ala Asp Glu Leu Glu Lys Leu Phe Glu  
 145 150 155 160  
 Ser Val Lys Asn Leu Ser Lys Ala Ala Lys Glu Met Leu Thr Asn Ser  
 165 170 175  
 Val Lys Glu Leu Thr Ser Pro Val Val Ala Glu Ser Pro Lys Lys Pro  
 180 185 190

<210> 86  
 <211> 191  
 <212> PRT  
 <213> borrelia burgdorferi

<400> 86  
 Asn Ser Gly Lys Gly Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser  
 1 5 10 15  
 Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser  
 20 25 30  
 Asn Ala Val Val Leu Ala Val Lys Glu Ile Glu Thr Leu Leu Ala Ser  
 35 40 45

Ile	Asp	Glu	Leu	Ala	Thr	Lys	Ala	Ile	Gly	Lys	Lys	Ile	Gln	Gln	Asn
50						55					60				
Gly	Gly	Leu	Ala	Val	Glu	Ala	Gly	His	Asn	Gly	Thr	Leu	Leu	Ala	Gly
65					70				75					80	
Ala	Tyr	Thr	Ile	Ser	Lys	Leu	Ile	Thr	Gln	Lys	Leu	Asp	Gly	Leu	Lys
				85				90					95		
Asn	Ser	Glu	Lys	Leu	Lys	Glu	Lys	Ile	Glu	Asn	Ala	Lys	Lys	Cys	Ser
		100					105						110		
Glu	Asp	Phe	Thr	Lys	Lys	Leu	Glu	Gly	Glu	His	Ala	Gln	Leu	Gly	Ile
	115						120					125			
Glu	Asn	Val	Thr	Asp	Glu	Asn	Ala	Lys	Lys	Ala	Ile	Leu	Ile	Thr	Asp
	130					135					140				
Ala	Ala	Lys	Asp	Lys	Gly	Ala	Ala	Glu	Leu	Glu	Lys	Leu	Phe	Lys	Ala
145					150					155					160
Val	Glu	Asn	Leu	Ala	Lys	Ala	Ala	Lys	Glu	Met	Leu	Ala	Asn	Ser	Val
				165				170					175		
Lys	Glu	Leu	Thr	Ser	Pro	Ile	Val	Ala	Glu	Ser	Pro	Lys	Lys	Pro	
			180					185					190		